

Activity 2

Igneous Rocks and the Geologic History of Your Community

Think About It

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- How are igneous rocks similar to AND different from the sedimentary rocks that you have seen?
(look at pg. U15)



WHAT DO YOU THINK?

Activity 2

Investigate Part A

Learning Objective: In writing, SWBAT use a table to identify igneous rocks, using academic language, in order to understand how igneous rocks are classified.

1a. List ways you can divide these igneous rocks into groups.

2a. List the rocks that you placed in each category.

Light	Intermediate	Dark

4a. Use the chart to name each sample.

Rock #	Name
1	
2	
3	
4	
5	
6	

4b. How do geologists classify igneous rocks?

5a. Does rhyolite form at or below the Earth's surface? Explain.

5b. Does gabbro form at or below the Earth's surface? Explain.

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Igneous Rocks
Digging Deeper

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Learning Objective: In writing, SWABT compare and contrast intrusive and extrusive igneous rock using academic language in order to understand how igneous form.

Igneous rock

rock formed when molten rock cools and crystallizes

Magma

molten rock material from inside the Earth

The temperature of magma ranges from about 650°C to 1200°C

Intrusive igneous rock

igneous rock that forms as magma cools and crystallizes below Earth's surface

It usually forms when magma cools and becomes solid before it reaches the surface

Examples of intrusive igneous rock

- granite
- diorite
- gabbro



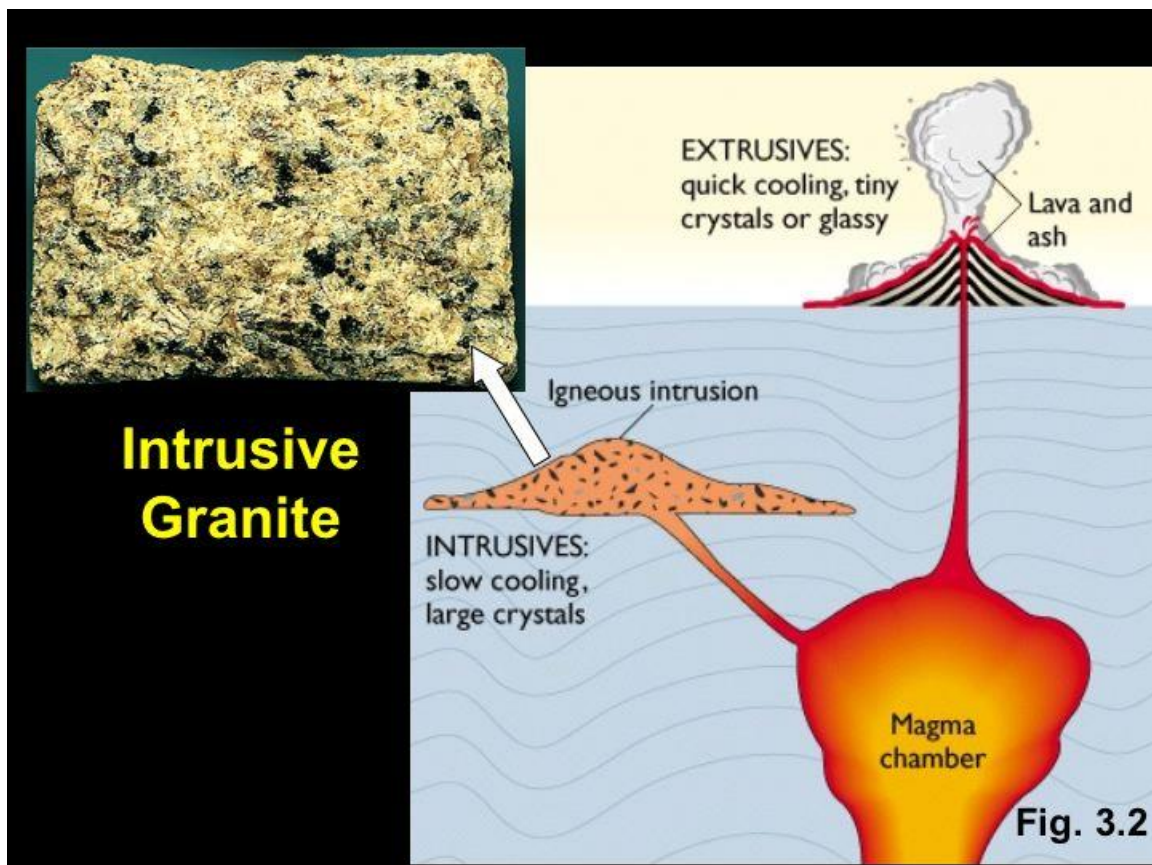
Granite



Diorite



Gabbro



Lava

magma that reaches the Earth's surface and flows out

Extrusive igneous rock

igneous rocks that form as **lava** cools and crystallizes **at** Earth's surface

Examples of
extrusive igneous
rock

- pumice
- rhyolite
- andesite
- basalt
- obsidian



Pumice

Rhyolite

Andesite

Basalt

Obsidian

Crystal size of an
igneous rock

depends on how fast the magma or
lava cools

The crystal size affects the texture
of an igneous rock

Course-grained
texture

when magma cools very slowly
under Earth's surface, the crystals
have plenty of time to grow to be
large



Intrusive igneous rocks are found at Earth's surface after erosion has removed the rocks and soil above them



Fine-grained texture

when lava cools quickly at Earth's surface, the crystals are small because they don't have time to grow



http://www.classzone.com/books/earth_science/terc/content/investigations/es0603/es0603page05.cfm?chapter_no=investigation

Glassy texture

results when the lava cools VERY quickly, no crystals have time to form

Example: obsidian



Learning Objective:

In writing, SWBAT explain how the chemical composition of an igneous rock determines its color using academic language.

Color of an igneous rock

depends on the amount of iron and magnesium in the rock

Light in color

white, light gray, or pink

They are lighter in color because they are low in iron and magnesium



Dark in color

dark green, gray, black or brown

They are darker in color because they are high in iron and magnesium



Activity 2

Check Your Understanding

Date

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1. Describe the main difference between intrusive and extrusive igneous rock.
2. How do the two main types of igneous rocks form?
3. Explain why some Igneous rocks are light in color and others are dark in color.
4. Explain how where an igneous rock forms determines its texture.